

SDMS US EPA REGION V

COLOR - RESOLUTION - 3

IMAGERY INSERT FORM

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SITE NAME	SAUGET AREA I
DOC ID #	153316
DOCUMENT VARIATION	_ COLOR OR <u>X</u> RESOLUTION
PRP	RMD - SAUGET AREA I
PHASE	SAS
OPERABLE UNITS	
PHASE (AA DOCUMENTS ONLY)	____ Remedial ____ Removal ____ Deletion Docket ____ Original ____ Update # ____ Volume ____ of ____
COMMENT(S) PHOTOCOPIES OF MAPS & PHOTOGRAPHS FRC 643	

15331L C.2

Med. yya
1/20/89

L163000000--St. Clair County
H.H. Hall Construction
ILD982073603

5E0301-40102

Not
RCRA

RECEIVED

JAN 4 - 1989

Pre-Remedial
Unit

CERCLA

Preliminary Assessment Report



Illinois Environmental
Protection Agency
P.O. Box 19276,
Springfield, IL 62794-9276

007040

Subsurface Soils Semivolatiles

	SITE	SITE H	SITE H	BLANK	SITE P	SITE P	SITE P	SITE P	SITE O	SITE O	SITE O	SITE O	SITE O	SITE O	PLANW
	SAMPLE NUMBER	DC-N1-05	DC-N2-06	DC-NB-07	DC-P1-53	DC-P2-54	DC-P3-55	DC-P5-56	DC-O1-59	DC-O2-60	DC-O3-61	DC-O4-62	DC-O5-63	DC-O5-64	DC-O8-65
	SAMPLE DEPTH	0-10'	5'-15'		0-10'	25'-35'	10'-25'	10'-25'	15'-25'	20'-30'	10'-20'	0-10'	8.5'-20'	8.5'-25'	
	DATE SAMPLED	12-15-86	12-15-86	12-16-86	2-11-87	2-11-87	2-12-87	2-12-87	2-16-87	2-17-87	2-17-87	2-17-87	2-17-87	2-17-87	2-18-87
1	Diethyl Phthalate														
2	Acenaphylene														
3	3-Nitroaniline														
4	Acenaphthene														
5	2,4-Dinitrophenol														
6	4-Nitrophenol														
7	Bibenzofuran														
8	2,4-Dinitrotoluene														
9	2,6-Dinitrotoluene														
10	Diethylphthalate														
11	4-Chlorophenyl-Phenylether														
12	Fluorene														
13	4-Nitroaniline														
14	4,6-Dinitro-2-methylphenol														
15	N-Nitrosodiphenylamine											50000 J			
16	4-Bromophenyl-phenylether														
17	Hexachlorobenzene														
18	Pentachlorophenol														
19	Phenanthrene	434	203 J								22619	474359 J			
20	Anthracene										5357	217949	963 J		
21	Di-n-butyl phthalate				16250 J	155 J	63 J	325 J	5287				3780 J		2785 J
22	Fluoranthene	689	293 J									43390 J			
23	Pyrene	553	215 J									282051			
24	Butyl Benzyl phthalate														
25	3,3'-Dichlorobenzidine														
26	Benzo(a)Anthracene	263 J										121795			
27	bis(2-ethylhexyl) phthalate	934	1266					225 J	1379 BJ		1905 BJ			2439 JB	
28	Chrysene	276 J										282051		1951 J	
29	Di-n-octyl phthalate														
30	Benzo(b)Fluoranthene	289 J	152 J									79487 J			
31	Benzo(k)Fluoranthene														
32	Benzo(a)Pyrene	211 J										66667 J			
33	Indeno(1,2,3-cd)Pyrene														
34	Benzo(g,h,i)Perylene														
35	Dibenz(a,h)Anthracene											52564 J			

Subsurface Soil Inorganics

[illegible]

Table 4-18

SUMMARY OF SUBSURFACE SOIL SAMPLING RESULTS FOR SITE N

Chemical Name	Number of Times Detected*	Highest Concentration Detected (mg/kg)	Sample Containing Highest Concentration
<u>Volatile Organics</u>			
4-methyl-2-pentanone	1	0.004J	N1-05
<u>Semivolatile Organics</u>			
phenanthrene	2	0.43	N1-05
fluoranthene	2	0.68	N1-05
pyrene	2	0.55	N1-05
benzo(a)anthracene	1	0.26J	N1-05
chrysene	1	0.28J	N1-05
benzo(b)fluoranthene	2	0.29J	N1-05
benzo(a)pyrene	1	0.21J	N1-05
<u>Pesticides/PCBs</u>			
None detected.			

* A total of 2 subsurface soil samples were collected from Site N. The numbers listed represent the number of samples, of the total of 2, in which each compound was detected.

J Estimated value. Result is greater than zero, but less than specified detection limit.

Source: Ecology and Environment, Inc. 1988.

DOCUMENT A

SUPPORTING DOCUMENT REFERENCE SHEET

- DOCUMENT A Analytical lab results from subsurface soil borings.
- DOCUMENT B Analytical lab results from surface water and sediment
samples collected from Dead Creek adjacent to the site.
- DOCUMENT C Subsurface soil boring logs (N1, N2), soil description
summary, and soil boring location map.

Source: IEPA, Division of Land Pollution Files, Superfund, E&E's Report
on the Dead Creek, Sauget Sites.

007562

Supporting Documentation

DATE: 8/31/88

TIME: 9:15 AM

Photograph by:

JOHN MORGAN

Location:

H. H. HALL CONST.
(DEAD CREEK)

Comments: Picture taken toward

NORTH

PHOTO #5



DATE: 8/31/88

TIME: 9:15 AM

Photograph by:

JOHN MORGAN

Location: H. H. HALL
CONST. (DEAD CREEK)

Comments: Picture taken toward

SOUTH:

PHOTO #6



007000

DATE: 8/31/88

TIME: 9:00 AM

Photograph by:

JOHN MORGAN

Location:

H. H. HALL

CONSTRUCTION

Comments: Picture taken toward

WEST

Photo # 3



DATE: 8/31/88

TIME: 9:05 AM

Photograph by:

JOHN MORGAN

Location: H. H. HALL

CONSTRUCTION

Comments: Picture taken toward

WEST:

PHOTO # 2



00720

DATE: 8/31/88

TIME: 8:45 AM

Photograph by:

JOHN MORGAN

Location:

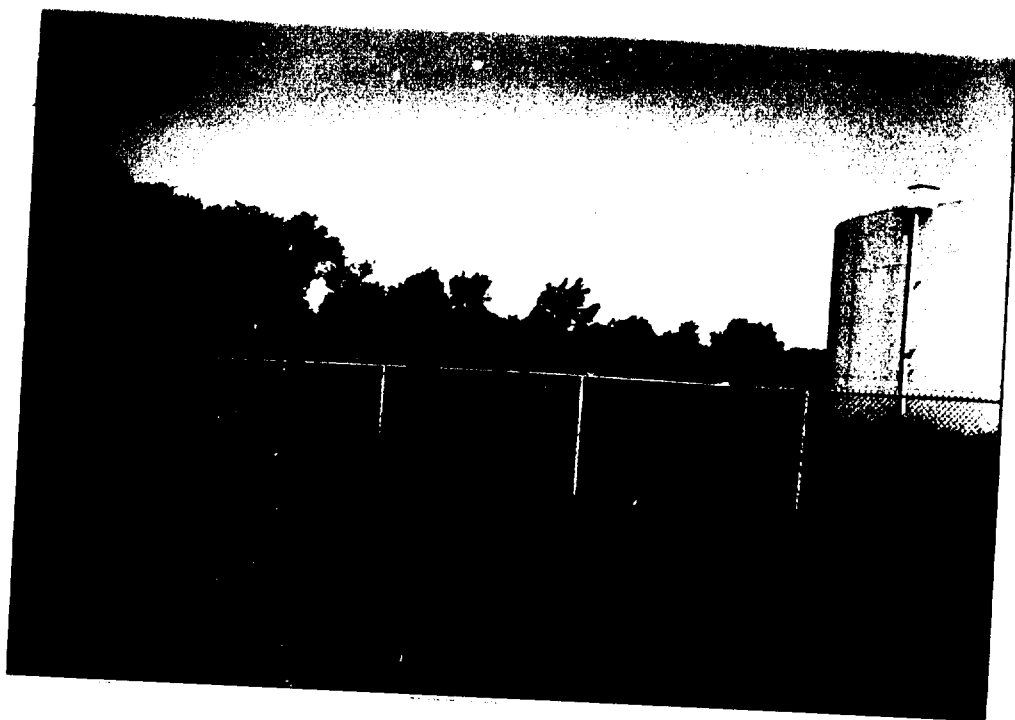
H. H. HALL

CONSTRUCTION

Comments: Picture taken toward

WEST

Photo #1



DATE: 8/31/88

TIME: 9:10 AM

Photograph by:

JOHN MORGAN

Location: H. H. HALL

CONSTRUCTION

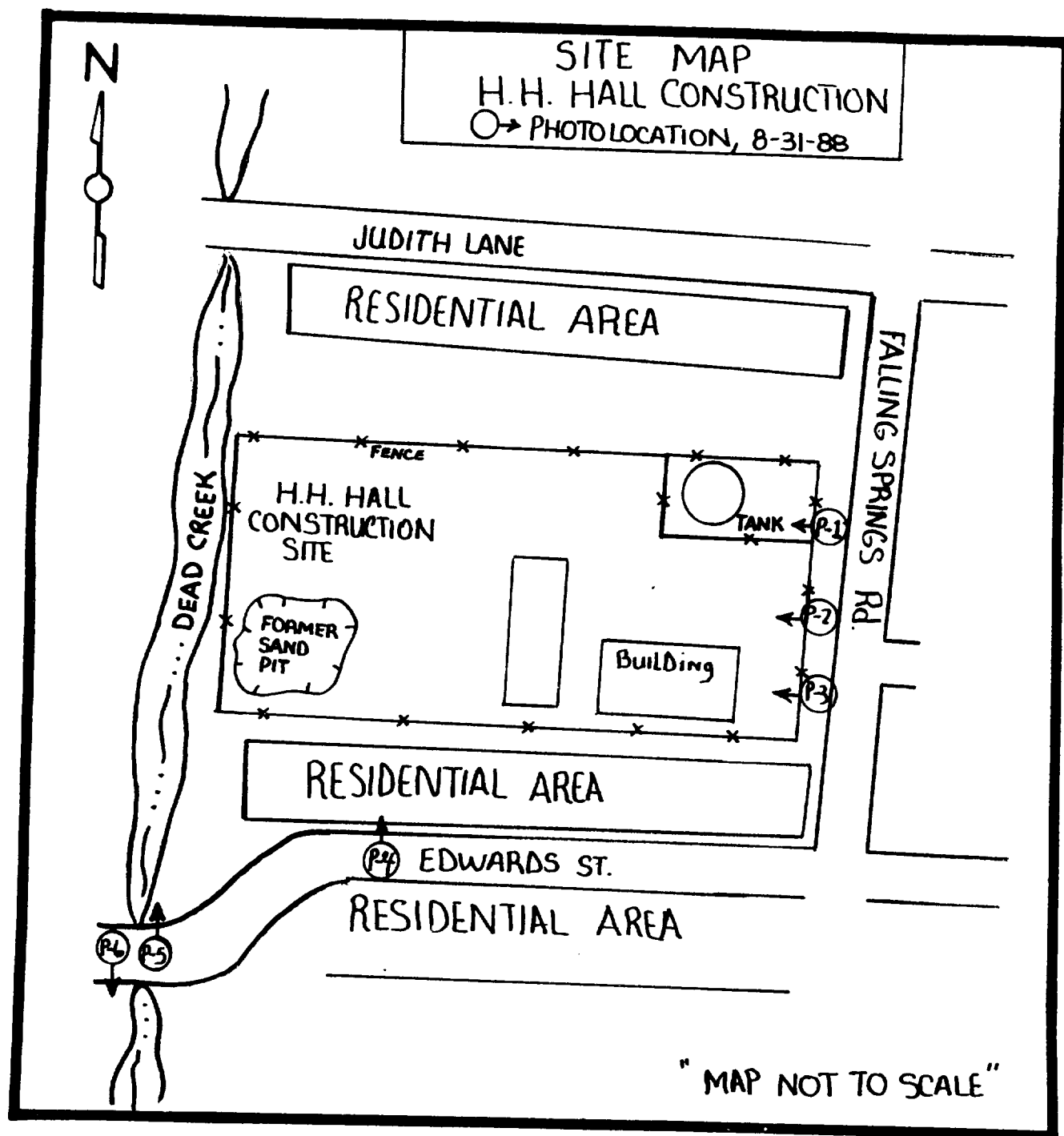
Comments: Picture taken toward

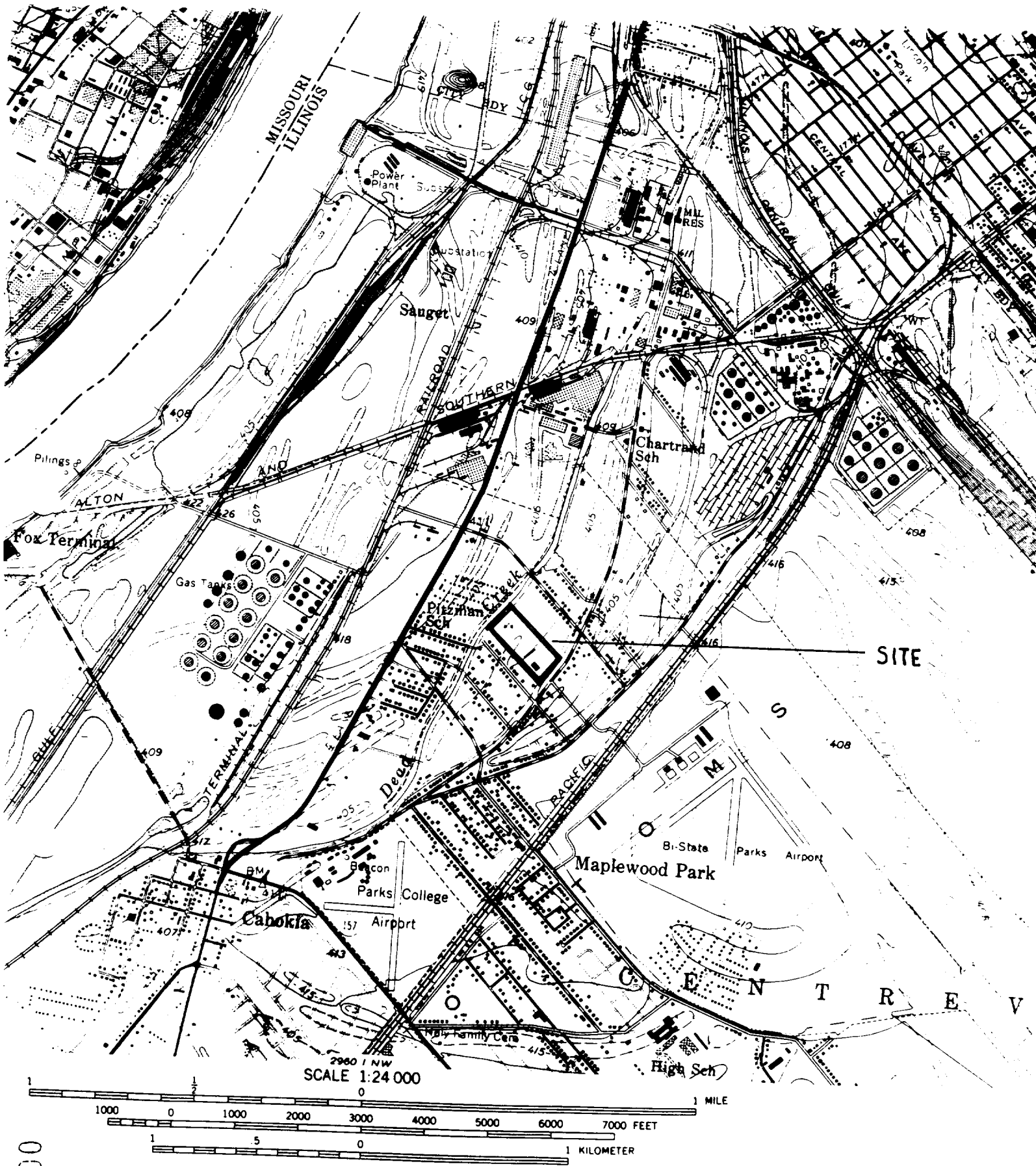
NORTH

Photo #4



007053





007230




THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
STATE GEOLOGICAL SURVEY, URBANA, ILLINOIS 61801,
AND BY THE DIVISION OF RESEARCH AND TECHNICAL INFORMATION
MISSOURI DEPARTMENT OF NATURAL RESOURCES, ROLLA, MISSOURI 65401
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

Revisions shown in purple compiled by the Geol.
Survey from aerial photographs taken 1968 and
This information not field checked



 Illinois Environmental Protection Agency		 N		SITE NAME <u>H. H. HALL CONST.</u> SITE ID # <u>982073603</u>	
USGS TOPOGRAPHIC MAPS					
NAME <u>WESTER GROVES</u> DATE <u>1954</u> REVISED <u>1974</u>		NAME <u>CAHOKIA</u> DATE <u>1954</u> REVISED <u>1974</u>		 QUADRANGLE LOCATION	
NAME <u>CAHOKIA</u> DATE <u>1954</u> REVISED <u>1974</u>		NAME <u>CAHOKIA</u> DATE <u>1954</u> REVISED <u>1974</u>			
NAME DATE REVISED		NAME DATE REVISED			
<small>Scale: 1 inch = 1 mile CONTOUR INTERVAL: 10 FEET DOTTED LINES REPRESENT 5 FOOT CONTOURS NATIONAL GEODETIC VERTICAL DATUM OF 1929</small>					

007655







007234



007133



007052

 Illinois Environmental Protection Agency		SITE NAME H.H.HALL CONSTRUCTION SITE ID # 982073603	
		USGS TOPOGRAPHIC MAPS	
NAME GRANITE CITY DATE 1954 REVISED 1982	NAME MONKS MOUND DATE 1954 REVISED 1974	 ILLINOIS	
NAME CANDOKIA DATE 1954 REVISED 1974	NAME FRENCH VILLAGE DATE 1954 REVISED 1982		
MAP SCALE: 0		QUADRANGLE LOCATION	
		1 mile	

023100





007243



SITE LOCATION

007347

On August 13, 1988, IEPA personnel conducted an off-site reconnaissance inspection of the HHHC site. The site appeared to be abandoned at the time of the inspection and was completely surrounded by a secure metal fence. The disposal pit is located at the southwest corner of the property and was not easily visible due to overgrown vegetation and access restrictions. The property is bordered by residential areas on the north, south and east, and by Dead Creek on the west. The Mississippi River is located about 1 1/4 miles west of the site, and the remaining area is commercial.

H.H. Hall Construction Site has been assigned a medium priority for a site inspection. This decision is based on the adverse impact the site potentially poses to the surrounding population and environment.

JWM:tk:4/35/16-2

007242

This is a detailed black and white topographic map of St. Louis, Missouri, and the surrounding area. The map shows the Mississippi River flowing through the city, with the city grid and major landmarks like the Gateway Arch and the St. Louis Zoo clearly visible. The map includes labels for various streets, parks, and landmarks, as well as a scale bar and a north arrow.

Key features and labels on the map include:

- Geographical Features:** The Mississippi River, the Gateway Arch, the St. Louis Zoo, and the St. Louis Botanical Garden.
- Streets and Roads:** Major roads like the Veterans Memorial Expressway (I-44) and the Veterans Memorial Bridge are shown. Numerous city streets are labeled, including Market Street, Main Street, and Olive Street.
- Landmarks and Parks:** The Gateway Arch, the St. Louis Zoo, the St. Louis Botanical Garden, and several parks like Forest Park and Washington Park are marked.
- Scale and Orientation:** A scale bar at the bottom indicates distances in miles (0 to 10). A north arrow is located in the bottom right corner.
- Topography:** Contour lines are used to show elevation changes across the landscape.

LOUIS CITY
CLAIR CO

L1630000000 -- St. Clair County
H.H. Hall Construction
ILD982073603

November 30, 1988

EXECUTIVE SUMMARY

H.H. Hall Construction Company Site N (HHHC) is one of eighteen suspected hazardous waste sites in the St. Clair County area investigated by Ecology and Environment, Inc. (E & E) under contract by the Illinois EPA. The purpose of the Dead Creek project was to gather sufficient data to apply the HRS model and characterize site conditions.

The HHHC site is an operations and equipment storage facility owned and operated by H.H. Hall Construction Company of East St. Louis. The entire facility covers approximately 23 acres and is located at 3525 Falling Springs Road in the town of Cahokia. The site is bordered on the north by residential property along Judith Lane; on the west by Dead Creek; on the south by residential property along Edwards Street; and on the east by a residential area along Falling Springs Road. Historical area photographs indicate that land excavations were first evident in the early 1950's. According to E & E, the excavation observed in the aerial photograph is currently present as a borrow pit located in the southwest corner of the property. Company officials claim that concrete rubble and other demolition construction debris are the only wastes disposed of in the pit by Hall Construction.

The pit is situated in an unconsolidated alluvium and glacial outwash environment. This section is underlain by Mississippian Age bedrock and older bedrock formations. The alluvium and glacial outwash deposit consists of two layers, the Cahokia Alluvium and the Mackinaw Member of the Henry Formation. These two formations are hydraulically interconnected and have a composite thickness ranging from 70 to 120 feet thick. Sand and gravel deposits within this section supply water to several local industries and to private residents in the area, who are unable to obtain water from public supplies due to distribution restrictions. The primary source of public drinking water is supplied from the Mississippi River at a water intake three miles upstream from the site. The closest downstream intake is 28 miles south of the site and supplies drinking water to the Village of Crystal, Missouri.

A soil gas survey of the site conducted by E & E revealed that five of the eight locations tested had concentrations of volatile organic soil gases substantially above background concentrations. Two of these locations had concentrations greater than 1000 mg/L. On December 15, 1988, E & E drilled two subsurface soil borings (N-1, N-2) to a depth of 20 and 40 feet deep. Analysis of soil samples taken from the two borings revealed the presence of organic contaminants in both samples. The contaminants detected consisted of phenanthrene, fluoranthene, pyrene, and benzo(a)pyrene. The highest concentration detected was 0.68 mg/kg of fluoranthene. A total organic concentration of 3.6 mg/kg was detected in sample N1-05. The sample was composited from the surface to a depth of 10 feet.

Subsurface Soils Semivolatiles

[illegible]

Explanation For Analytical Data Summary Tables

All ground water results in ug/l.
All soil/sediment organic results in ug/kg
All soil/ sediment inorganic results in mg/kg

For sample location headings, the following qualifiers are used :

- + Denotes blank samples.
- * Denotes duplicate samples.
- ^ Denotes that sample was not analyzed for the compounds listed.

For chemical results, the following qualifiers are used :

- B Compound detected in blank samples.
- J Estimated value . Result is less than the specified detection limit, but greater than zero.
- E Estimated value. Concentration detected exceeds the calibrated range.
- C Result confirmed by GC/MS.
- * Duplicate analysis not within control limits.
- R Spike sample recovery not within control limits.

007008

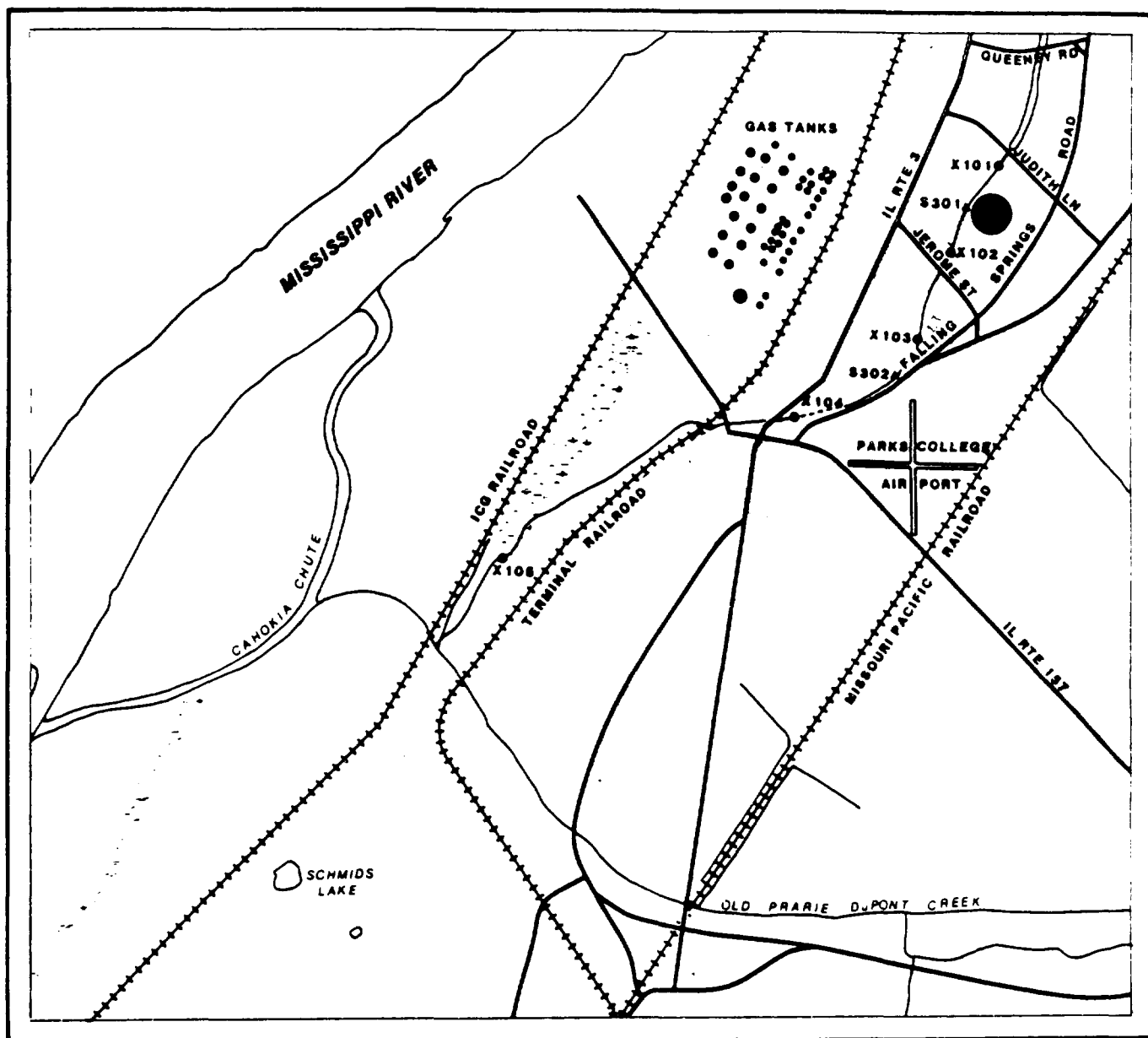
DOCUMENT B

007069

TABLE C-1: ANALYSIS OF SURFACE WATER AND SEDIMENT
 SAMPLES FROM CREEK SECTORS C THROUGH F
 (COLLECTED BY IEPA 9-25-80)

PARAMETERS	SAMPLE LOCATIONS						
	Water		Sediment				
	S301	S302	x101	x102	x103	x104	x105
Aluminum			12,000				
Arsenic	0.008	0.006	26				
Barium	0.12	0.08	1,300	4,700	210	390	475
Beryllium	-	-	-	3	-	2	-
Boron	0.06	0.04	-	76	-	-	-
Cadmium	-	-	-	50	8	31	2
Calcium			24,000	5,300	210,000	16,000	13,000
Chromium	-	0.01	400	50	60	50	-
Cobalt			40	32	6	8	9
Copper	0.26	0.04	15,000	17,200	320	1,800	360
Iron	0.66	0.87	57,000	110,000	11,000	19,000	18,000
Lead	-	-	800	1,300	260	250	75
Magnesium	3	2	7,100	2,000	10,000	5,100	3,300
Manganese	0.03	0.12	600	170	210	160	200
Mercury			1.2				
Nickel	0.05	0.01	2,000	2,300	45	600	-
Phosphorus	0.19	0.2		6,200	720	1,200	4,200
Potassium	6.6	3.3	2,400	900	1,400	2,100	1,400
Silver	-	-	-	45	10	-	-
Sodium	3	3	800	1,100	100	190	125
Strontium	0.08	0.07	100	140	210	47	43
Vanadium	-	-	-	50	22	31	35
Zinc	0.24	-	12,000	21,000	900	5,600	780
PCB	-	-	0.12	0.12	2.8	2	-

NOTE: All results in ppm.
 Blanks indicate parameter not analyzed.
 - Indicates below detection limits.



SCALE
0 0.5 1 MILE

LEGEND
X101 SEDIMENT SAMPLING LOCATION
S301 SURFACE WATER SAMPLING LOCATION
RESIDENTIAL AREA

FIGURE C-1
IEPA SAMPLING LOCATIONS CREEK SECTORS C THROUGH F

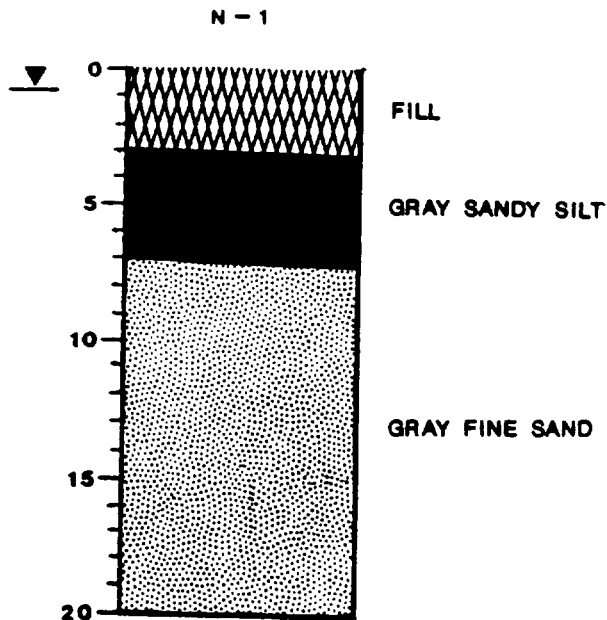
007271

DOCUMENT C

013200

Project Name Dead Creek
Project No. IL 3140
Date Prepared 12-15-86
Prepared by Kevin Phillips

Depth (ft) Description



Boring/Well No. N-1
Location Site N
Owner IEPA
Top of Inner Casing Elev. NA
Drilling Firm Fox drilling
Driller Jerry Hammon
Start & Completion Dates 12/15, 12/15/86
Type of Rig Mobile B-61

Method of Drilling 3 3/4" I.D.
hollow stem augers

WELL DATA

Hole Diam. 8 in.
Boring Depth 20.0 ft.
Casing and Screen Diam. _____
Screen Interval _____
Screen Type _____
Stickup _____
Well Type _____
Well Construction:
 Filter Pack _____
 Seal _____
 Grout _____
 Lock No. _____

TEST DATA

Static Water Elev. _____ Date _____
Static Water Elev. _____ Date _____
Slug Test Yes _____ No _____
Test Date _____
Hydraulic Conductivity _____
Other _____

WATER QUALITY

Samples Taken Yes _____ No X
No. of Samples _____
Types of Samples _____

Date Sampled _____
Samplers _____
Samples Analyzed for _____

Split Samples Yes _____ No X
Recipient _____

Comments Subsurface soil samples
from boring 0 - 10' analyzed for
HSL compounds.

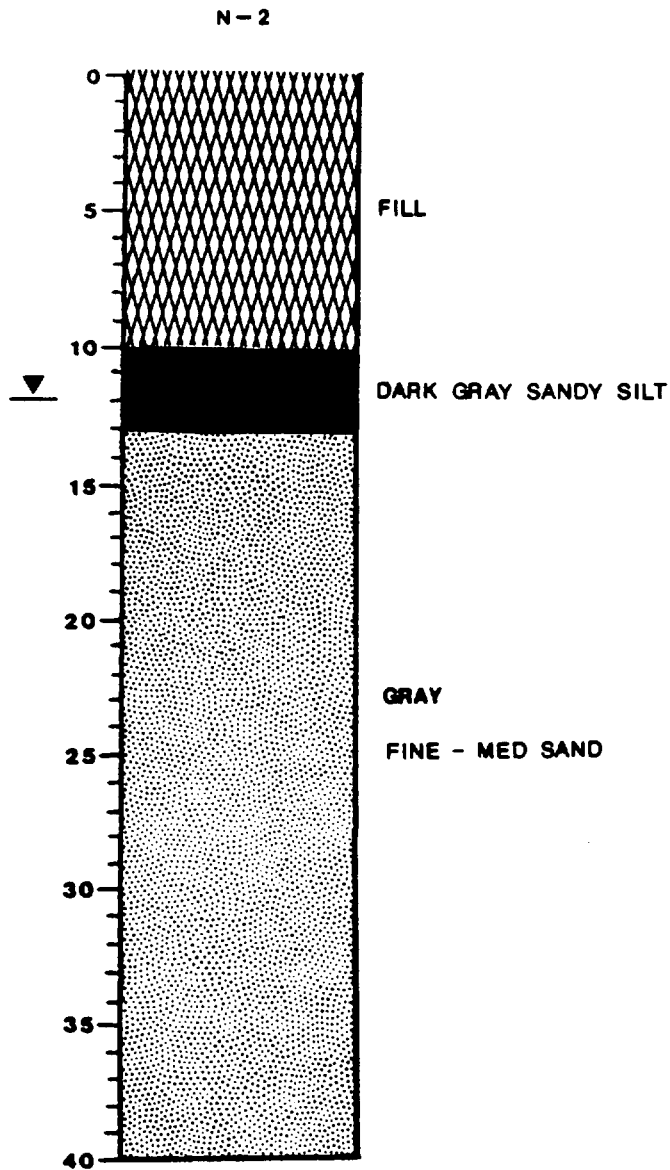
REMARKS

00750

Project Name Dead Creek
Project No. IL 3140
Date Prepared 12-15-86
Prepared by Kevin Phillips

Boring/Well No. N-2
Location Site N
Owner IEPA
Top of Inner Casing Elev. NA
Drilling Firm Fox drilling
Driller Jerry Hammon
Start & Completion Dates 12/15, 12/15/86
Type of Rig Mobile B-61

Depth (ft) Description



Method of Drilling 3 3/4" I.D. hollow stem augers and rotary

WELL DATA

Hole Diam. 8 in.
Boring Depth 40.0 ft.
Casing and Screen Diam. _____
Screen Interval _____
Screen Type _____
Stickup _____
Well Type _____
Well Construction:
Filter Pack _____
Seal _____
Grout _____
Lock No. _____

TEST DATA

Static Water Elev. _____ Date _____
Static Water Elev. _____ Date _____
Slug Test Yes _____ No _____
Test Date _____
Hydraulic Conductivity _____
Other _____

WATER QUALITY

Samples Taken Yes _____ No X
No. of Samples _____
Types of Samples _____

Date Sampled _____
Samplers _____
Samples Analyzed for _____

Split Samples Yes _____ No X
Recipient _____

Comments Subsurface soil samples from boring 5 - 15' analyzed for HSL compounds.

REMARKS

007074

Site Dead Creek Site-N

Boring/Well No. N-1

Sample Depth Blow Count

Description

1 - 2.5	4-6-10	<u>0-2.5</u> FILL consisting of crushed limestone, gravel, and fine to coarse grain sand. Wet. Fill discontinues @ 3'.
3.5 - 5	3-9-9	<u>3.5-4</u> Stiff gray very sandy SILT. Some fine grain sand. Wet. <u>4-5</u> Brown silty fine grain SAND. Wet.
6 - 7.5	2-4-3	<u>6-7</u> Loose gray very sandy SILT. Some fine grain sand. Black and reddish staining throughout. Wet. <u>7-7.5</u> Loose brownish gray fine to medium grain SAND. Some reddish staining. Wet.
8.5 - 10	2-4-7	Loose gray sandy SILT. Some fine grain sand. Trace of organic material (wood, etc.). Stained black. Wet.
11 - 12.5	1-2-5	Loose brown very silty fine grain SAND. Some silt. Black stained layer at 12' (-1")
13.5 - 15	1-3-3	Same as above.
16 - 17.5	2-5-7	Firm gray silty fine grain SAND. Trace of small to medium gravel. Wet.
18.5 - 20	2-3-7	Firm gray fine grain SAND. Wet. Z.O.B. @ 20'

22200

Site Dead Creek Site-N

Boring/Well No. N-2

Sample Depth Blow Count

Description

		<u>0-1</u> Crushed limestone fill
1 - 2.5	9-10-12	<u>1-2</u> Crushed lime fill <u>2-2.5</u> FILL consisting of loose dark gray very sandy SILT. Some fine grain sand. Trace of organic material (wood & roots).
3.5 - 5	N	No recovery - possible rubber tire
6 - 7.5	N	No recovery - possible concrete
8.5 - 10	47-6-2	FILL consisting of dark gray silty clay with concrete material and gravel. Fill discontinues @ approx. 10'.
11 - 12.5	6-10-9	Firm dark gray very sandy SILT. Some very fine grain sand. Trace of organic material (wood and roots). Black streaks. Wet.
13.5 - 15	3-4-4	Firm gray fine to medium grain SAND. Trace of small to medium gravel. Wet. Sand is rounded to sub angular and fairly well to poorly sorted.
16 - 17.5	7-11-12	Gray fine to medium grain SAND. Trace of small gravel. Wet.
18.5 - 20	8-12-14	Dense brown fine to medium grain SAND. Well sorted. Wet.
21 - 22.5	9-13-15	Same as above.
23.5 - 25	9-11-15	Dense gray fine to medium SAND. Trace of coarse grain sand and small gravel. Wet.
26 - 27.5	8-12-13	Dense gray fine to coarse grain SAND. Trace of small gravel. Wet.
28.5 - 30	9-14-23	Same as above.
31 - 32.5	7-9-11	Dense gray very fine grain SAND. Wet.
33.5 - 35	6-8-10	Same as above. Darker gray.
36 - 37.5	12-17-23	Very dense. Gray fine to coarse grain SAND. Wet.
38.5 - 40	8-9-12	Same as above.
		E.O.B. @ 40'

007276

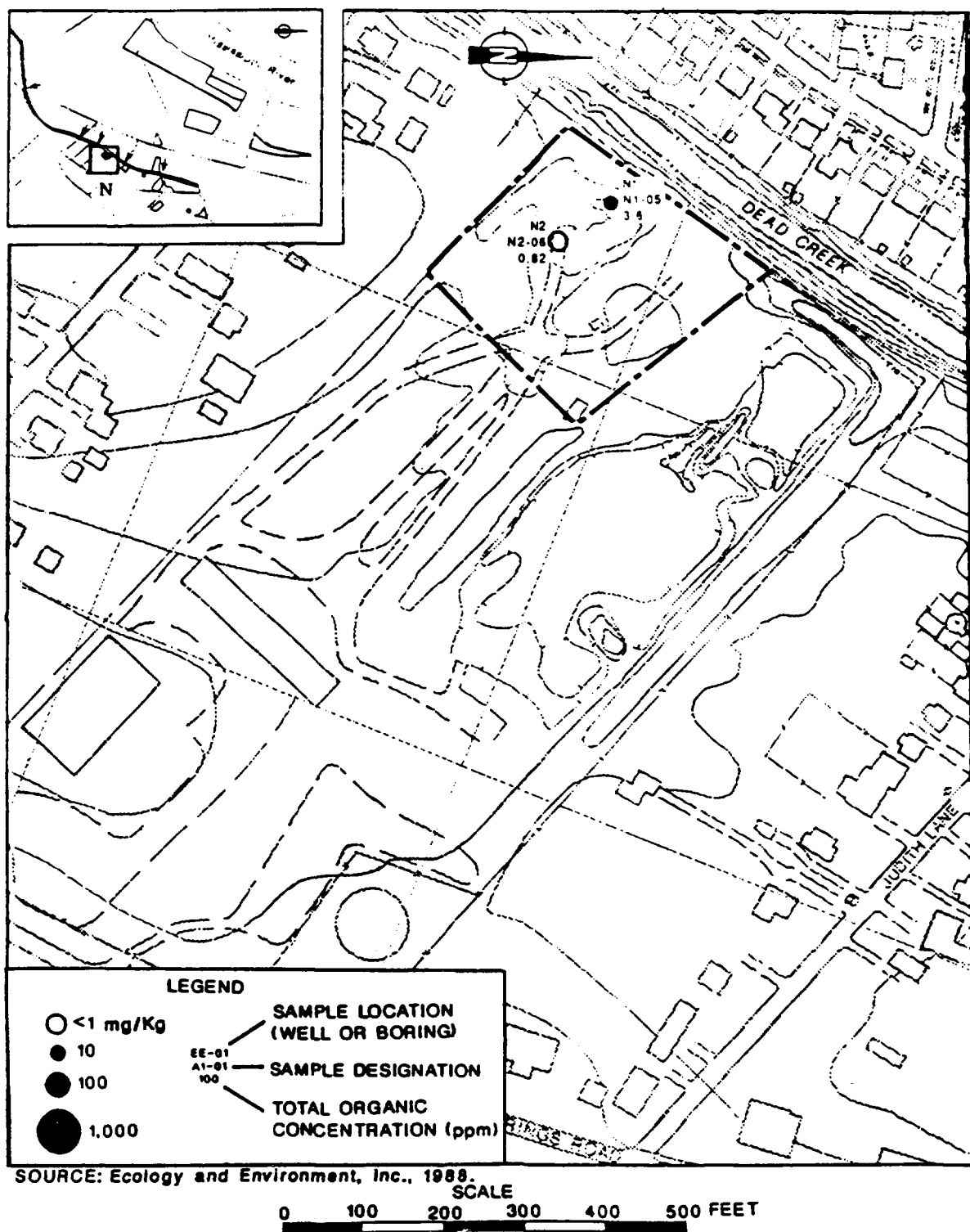


FIGURE 4-45 TOTAL ORGANIC CONCENTRATIONS IN SUBSURFACE SOILS AT SITE N

Hazard Ranking System

Preliminary Score

Projected Score

Confidential

Facility Name : H.H. Hall Construction_____

Location : 3525 Falling Springs Road, Cahokia, Illinois_____

EPA Region : Five_____

Person(s) In Charge of the Facility : Howard H. Hall_____

Name of Reviewer : John W. Morgan_____ Date : _11-22-88_____

General Description of the Facility :

(For example, landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

H.H.Hall Construction site is an operations and equipment storage facility owned and operated by H.H. Hall Construction Company of East St. Louis. The entire facility covers approximately 23 acres and contains an abandoned disposal pit. Results from an investigation conducted by E&E indicate contamination in two subsurface soil boring. Based on these finding, a preliminary assessment and Pre/Projected HRS_ Score was conducted under the Pre-Remedial CERCLA Program.

HRS Scores : Sm = 25.74 (Sgw = 43.25 Ssw = 10.63 Sa =0.00)

Pro Scores : Sm = 25.74 (Sgw = 43.25 Ssw = 10.63 Sa =0.00)

Figure 1
HRS Cover Sheet

007279

HRS Ground Water Route Work Sheet

Rating Factor	Assigned Value	Multi plier	Score	Max. Score	Ref. Section
[1] Observed Release	0 45	1	45	45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					
Depth to Aquifer of Concern	0 1 2 3	2	0	6	3.2
Net Precipitation	0 1 2 3	1	0	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	0	3	
Physical State	0 1 2 3	1	0	3	
Total Route Characteristics score			0	15	
[3] Containment	0 1 2 3	1	0	3	3.3
[4] Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics score			19	26	
[5] Targets					3.5
Ground Water Use	0 1 2 3	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	20	40	
Total Targets score			29	49	
[6] If line [1] is 45, multiply [1] X [4] X [5] If line [1] is 0, multiply [2] X [3] X [4] X [5]			2.5E	57,330	
[7] Divide line [6] by 57,330 and multiply by 100 S = 43.25					

File Name : A:\HALLCON

HRS Surface Water Route Work Sheet

Rating Factor	Assigned Value	Multi plier	Score	Max. Score	Ref. Section
[1] Observed Release	0 45	1	45	45	4.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	4.2
1-yr. 24 hr. Rainfall	0 1 2 3	1	0	3	
Distance to Nearest Surface Water	0 1 2 3	2	0	6	
Physical State	0 1 2 3	1	0	3	
Total Route Characteristics score			0	15	
[3] Containment	0 1 2 3	1	0	3	4.3
[4] Waste Characteristics					4.4
Toxicicty/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics score			19	26	
[5] Targets					4.5
Surface Water Use	0 1 2 3	3	6	9	
Distance to Sensitive Environment	0 1 2 3	2	2	6	
Distance to Water	12 16 18 20		0		
Intake Downstream	24 30 32 35 40				
Total Targets score			8	55	
[6] If line [1] is 45, multiply [1] X [4] X [5] If line [1] is 0, multiply [2] X [3] X [4] X [5]			6.8E	64,350	
[7] Divide line [6] by 64,350 and multiply by 100 S = 10.63					

007331

File Name : A:\HALLCON

HRS Air Route Work Sheet

Rating Factor	Assigned Value	Multi plier	Score	Max. Score	Ref. Section
[1] Observed Release	0 45	1	0	45	5.1
Date and Location: Sampling Protocol:					
If line [1] is 0, the S a = 0, Enter on line [5] If line [1] is 45, then proceed to line [2]					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Route Characteristics score				20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Targets Score				39	
[4] Multiply [1] X [2] X [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100 S a =					0

007252

File Name : A:\HALLCON

PRO Ground Water Route Work Sheet									
Rating Factor	Assigned Value	Multi plier	Score	Max. Score	Ref. Section				
[1] Observed Release	0 45	1	45	45	3.1				
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].									
[2] Route Characteristics									
Depth to Aquifer of Concern	0 1 2 3	2	0*	6	3.2				
Net Precipitation	0 1 2 3	1	0*	3					
Permeability of the Unsaturated Zone	0 1 2 3	1	0*	3					
Physical State	0 1 2 3	1	0*	3					
Total Route Characteristics score			0	15					
[3] Containment	0 1 2 3	1	0*	3	3.3				
[4] Waste Characteristics					3.4				
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18					
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8					
Total Waste Characteristics score			19	26					
[5] Targets					3.5				
Ground Water Use	0 1 2 3	3	9	9					
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	20	40					
Total Targets score			29	49					
[6] If line [1] is 45, multiply [1] X [4] X [5]									
If line [1] is 0, multiply [2] X [3] X [4] X [5]			2.5E	57,330					
[7] Divide line [6] by 57,330 and multiply by 100 S = 43.25									

A '*' represents a data gap between the Pre and the Pro

007353

File Name : A:\HALLCON

PRO Surface Water Route Work Sheet

Rating Factor	Assigned Value	Multiplier	Score	Max. Score	Ref. Section
[1] Observed Release	0 45	1	45	45	4.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					
Facility Slope and Intervening Terrain	0 1 2 3	1	0*	3	4.2
1-yr. 24 hr. Rainfall	0 1 2 3	1	0*	3	
Distance to Nearest Surface Water	0 1 2 3	2	0*	6	
Physical State	0 1 2 3	1	0*	3	
Total Route Characteristics score			0	15	
[3] Containment	0 1 2 3	1	0*	3	4.3
[4] Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics score			19	26	
[5] Targets					4.5
Surface Water Use	0 1 2 3	3	6	9	
Distance to Sensitive Environment	0 1 2 3	2	2	6	
Distance to Water	12 16 18 20		0		
Intake Downstream	24 30 32 35 40				
Total Targets score			8	55	
[6] If line [1] is 45, multiply [1] X [4] X [5] If line [1] is 0, multiply [2] X [3] X [4] X [5]			6.8E	64,350	
[7] Divide line [6] by 64,350 and multiply by 100 S = 10.63					

A '*' represents a data gap between the Pre and the Pro

007554

File Name : A:\HALLCON

PRO Air Route Work Sheet						
Rating Factor	Assigned Value	Multiplier	Score	Max. Score	Ref. Section	
[1] Observed Release	0 45	1	0	45	5.1	
Date and Location: Sampling Protocol:						
If line [1] is 0, the S a = 0, Enter on line [5] If line [1] is 45, then proceed to line [2]						
[2] Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3	1		3		
Toxicity	0 1 2 3	3		9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Route Characteristics score				20		
[3] Targets					5.3	
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30		
Distance to Sensitive Environment	0 1 2 3	2		6		
Land Use	0 1 2 3	1		3		
Total Targets Score				39		
[4] Multiply [1] X [2] X [3]				35,100		
[5] Divide line [4] by 35,100 and multiply by 100 S a =					0	

A '*' represents a data gap

007-55